

Service Manual

and Technical Guide

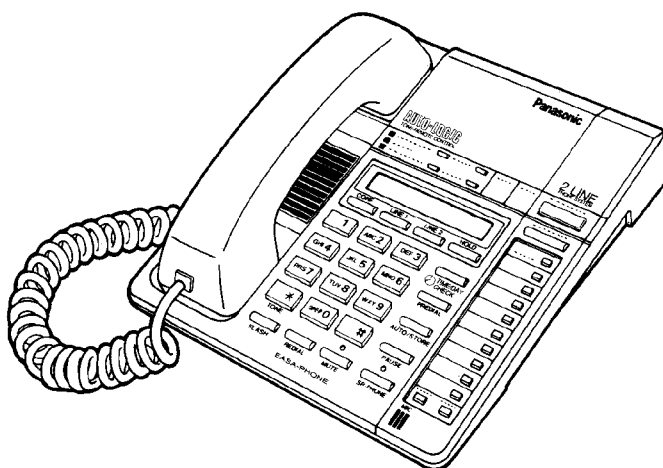
AUTO-LOGIC™

EASA-PHONE®

2-LINE INTEGRATED TELEPHONE
ANSWERING SYSTEM

Telephone Equipment

KX-T2740



SPECIFICATIONS\ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

CPU DATA\ИНФОРМАЦИЯ О ПРОЦЕССОРЕ

BLOCK DIAGRAM\БЛОК - СХЕМА

MEASUREMENT AND ADJUSTMENT METHOD\МЕТОДИКА ИЗМЕРЕНИЙ И РЕГУЛИРОВКИ

IC BLOCK DIAGRAM\БЛОК - СХЕМЫ МИКРОСХЕМ

SCHEMATIC DIAGRAM\ПРИНЦИПИАЛЬНАЯ СХЕМА

CASSETTE DECK PARTS LOCATION\РАСПОЛОЖЕНИЕ ЧАСТЕЙ ЛЕНТОПРОТЯЖНОГО МЕХАНИЗМА

CABINET AND ELECTRICAL PARTS LOCATION\РАСПОЛОЖЕНИЕ МЕХАНИЧЕСКИХ И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ

REPLACEMENT PARTS LIST\СПИСОК ЗАПАСНЫХ ЧАСТЕЙ

Panasonic

Matsushita Services Company
Division of Matsushita Electric
Corporation of America
50 Meadowland Parkway,
Secaucus, New Jersey 07094

Matsushita Electric
of Canada Limited
5770 Ambler Drive, Mississauga,
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Panasonic Sales Company,
Division of Matsushita Electric
of Puerto Rico, Inc.
San Gabriel Industrial Park
65th Infantry Ave. Km.9.5
Carolina, Puerto Rico 00630

SPECIFICATIONS

General:

Power Source: AC; AC adaptor KX-A11 (DC 12 V)
Power Output: 350 mW (max.)
Speaker: Unit; 6.5 cm (2¹/₂") PM dynamic
Handset; 2.6 cm (1³/₁₆") PM magnetic type
Microphone: Condenser microphone
Jacks: Telephone line, DC IN
Dimensions: 7¹³/₁₆"×9⁹/₃₂"×4¹/₁₆" (with handset)
[198 (W)×236 (D)×103 (H) mm]
Weight: 2 lbs 10.3 oz (1.21 kg)

Telephone Section:

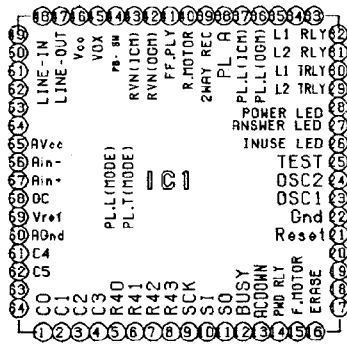
Memory Capacity: There are 10 Direct Call buttons, each Direct Call button consists of Upper and Lower memory locations. Each location (upper and lower) is capable of storing 16 digits.
(Transfer station is capable of storing 30 digits.)
Dial Speed: Tone (DTMF)/Pulse (10 pps)
Redial: Last dialed telephone number up to 15 times in 10 minute period
Pause: Two automatic dial tone detectors

Tape Deck Section:

Outgoing Message
(OGM): Micro Cassette (MC-30)
Recording Time is 30 seconds.
Incoming Message
(ICM): Micro Cassette (MC-30) (1 MIN/VOX/AO)
Tape Speed: 2.4 cm/s
Wow and Flutter: 0.65% (WRMS)
Motor: Electrical governor motor

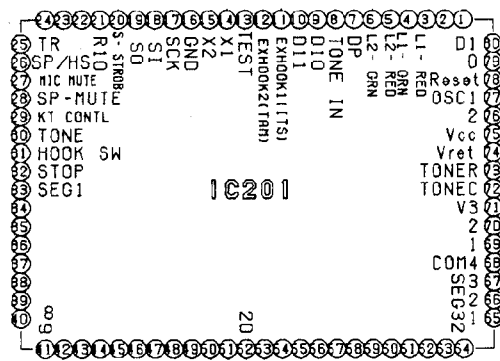
Design and specifications are subject to change without notice.

CPU DATA



Part No.: PQVI4678A05H
 Power Supply: 4.5~5.5V
 Program ROM: 8K x 10bit
 Inside Data RAM: 512 x 4 bit

Pin No.	Function	High	Low	Pin No.	Function	High	Low	
1	Strobe- Data		Active	33	Bell 2		Bell	
2	Strobe- Data			34	Bell 1		Bell	
3	Strobe- Data			35	CPC	CPC		
4	Strobe- Data			36	PLL (OGM)	ON		
5	Key Input		Press	37	PLL (ICM)			
6	Key Input			38	PLT (OGM/ICM)			
7	Key Input			39	2 way REC	2 way		
8	Key Input			40	R Motor	ON	PLAY	
9	ITS SCK			Busy	41	FF PLY		FF
10	ITS SO				42	RVN (OGM)		
11	ITS SI	43			RVN (ICM)			
12	ITS Busy	44			Position SW	Newtral	Active	
13	AC-Down	Normal	AC Down	45	Vox	No Voice	Vox	
14	PWD-RLY	Normal	Power-Down	46	Vcc			
15	F Motor	Active		47	Line Out	Active		
16	Erase	Active		48	Line In	Active		
17	Ringer-VOL	High	Low	49	MIC	Active		
18	Ringer			50	SP-Mute	Mute	Out	
19	Beep-L			51	ICM/OGM	Active		
20	Beep-S	Reset	GND	52	PLY/REC			
21	Reset			53	REC	Analog Vcc		
22	GND			54	SP-Out			
23	OSC1			55	A Vcc			
24	OSC2	Normal		56	A in			
25	TEST			57	A in		Analog GND	
26	IN USE		ON	58	GC			
27	Answer			59	V ref			
28	Power			60	A Gnd			
29	L2-T RLY			61	C4	Start		
30	L1-T RLY			62	C5			
31	L2- RLY			63	VG Start	Start		
32	L1-RLY			64	VG Busy	Busy		



Part No.: PQVI4608A56F
 Power Supply: 2.7~6.0V
 Program ROM: 8K
 Inside Data RAM: 1.184 x 4 bit

Pin No.	Function	High	Low	Pin No.	Function	High	Low
1	Mute LED			41	SEG 9		
2	ON/OFF LED			42	SEG 10		
3	L1-RED	OFF	ON	43	SEG 11		
4	L1-GRN			44	SEG 12		
5	L2-RED			45	SEG 13		
6	L2-GRN			46	SEG 14		
7	DP	Break	Make (H-imp)	47	SEG 15		
8	Power Down	Usual	Power Down	48	SEG 16		
9	Option Input	Usual	Active	49	SEG 17		
10	Option Input	Usual	Active	50	SEG 18		
11	EX-Hook (ITS)	OFF-Hook	ON-Hook	51	SEG 19		
12	EX-Hook (TAM)	OFF-Hook	ON-Hook	52	SEG 20		
13	Test	Usual		53	SEG 21		
14	X1			54	SEG 22		
15	X2			55	SEG 23		
16	GND		0V	56	SEG 24		
17	Serial Clock	Usual	Active	57	Not Used		
18	Serial Input			58	Not Used		
19	Serial Output			59	Not Used		
20	Serial Busy/RD			60	Not Used		
21	Key-Input			61	Not Used		
22	Key-Input	Usual	Active	62	Not Used		
23	Key-Input			63	Not Used		
24	Key-Input			64	Not Used		
25	TR	Hold	Release	65	COM 1		
26	SP/HS	SP-Phone	Handset	66	COM 2		
27	Mic Mute	ON	OFF	67	COM 3		
28	SP Mute	ON	OFF	68	COM 4		
29	KT-Control	Usual	Active	69	V 1		
30	Audible Tone	Active	Usual	70	V 2		
31	Hook SW	ON-Hook	OFF-Hook	71	V 3		
32	Stop Input	Stop	Usual	72	Tonec		Usual
33	SEG 1			73	Toner		Usual
34	SEG 2			74	V ref		
35	SEG 3			75	Vcc	5 V	
36	SEG 4			76	System Clock		
37	SEG 5			77	System Clock		
38	SEG 6			78	Rest	Reset	Usual
39	SEG 7			79	LCD Contrast	High	H-imp
40	SEG 8			80	LCD Contrast	High	H-imp

BLOCK DIAGRAM

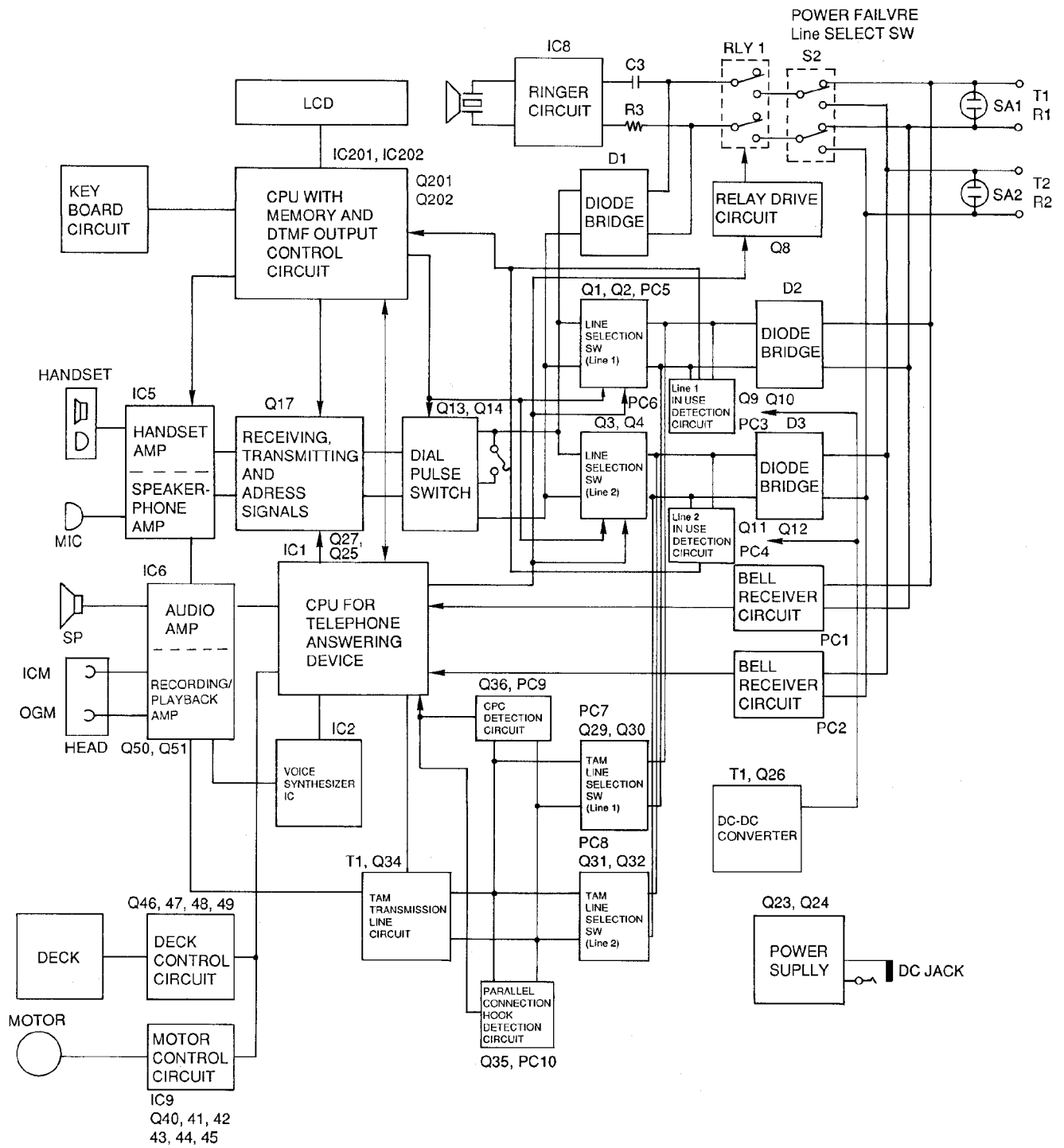
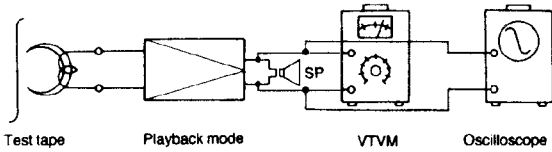
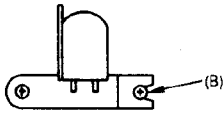
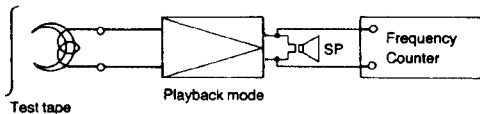


Fig. 9

MEASUREMENT AND ADJUSTMENT METHOD

- Notes:**
1. Make sure the heads are clean.
 2. Make sure the capstan and pressure roller are clean.
 3. Room temperature for measuring and adjusting: $20 \pm 5^\circ\text{C}$ ($68 \pm 9^\circ\text{F}$)
 4. Test equipments are not treated as replacement parts.

ITEM	MEASUREMENT & ADJUSTMENT	REMARKS
1. Head azimuth adjustment	<ol style="list-style-type: none"> 1. Play back the test tape (LCT2401-A). 2. Adjust screw (B) shown in Fig. B for maximum output at SP terminal. (Test equipment connection is shown below.) 	<p>* Record/playback head</p>  <p>Fig. B</p>
2. Tape speed adjustment	<ol style="list-style-type: none"> 1. Play back the test tape (LCT2401-A). 2. Adjust VR3 for 2980~3000 Hz on frequency counter reading. 	

Note: Perform the following adjustment after replacing IC5 and VR2.

Test Equipment:
Loop Simulator RC Oscillator VTVM
Preparation:
<ol style="list-style-type: none"> 1. Set the unit's controls as follows: <ol style="list-style-type: none"> A. SP-PHONE SWITCH—"ON" B. VOLUME CONTROL—"MAX" 2. Connect the AC Adaptor. 3. Set the variable resistor of the loop simulator to maximum resistance (fully counterclockwise). 4. Connect the unit to the loop simulator. 5. Make adjustment in a quiet room.
Reception Level:
<ol style="list-style-type: none"> 1. Set the loop simulator selector switch to "RX" 2. Set RC Oscillator to 1 kHz, -40 dBm with a VTVM. 3. Connect the VTVM to Test Points ∇ (-) - ∇ (+). 4. Adjust VR2 for a reading of $-18 \text{ dBm} \pm 0.5 \text{ dBm}$ on the VTVM.

Please refer to the Circuit Board and wiring Connection Diagram which is located at the test points (∇).

Schematic Diagram of Loop Simulator

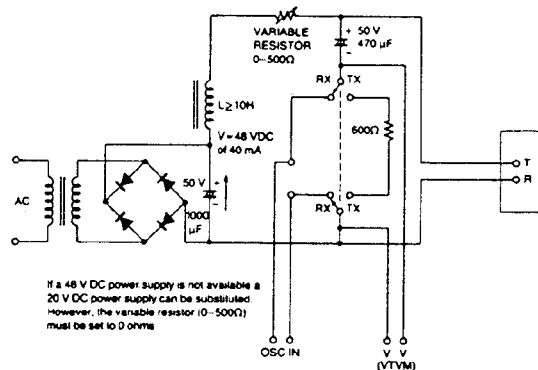


Fig. 10

IC BLOCK DIAGRAM

IC5 PQVISC79054A

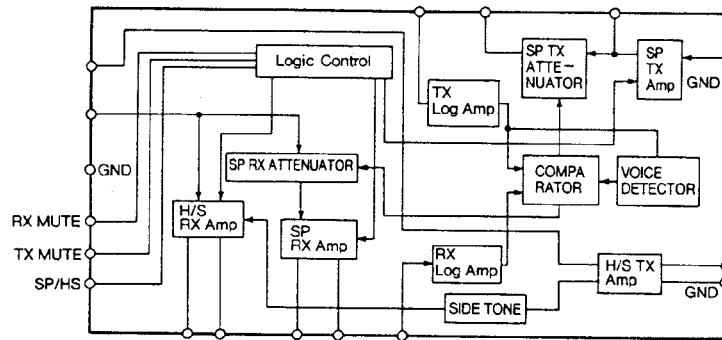


Fig. 11

IC8 PQVIBA6565A

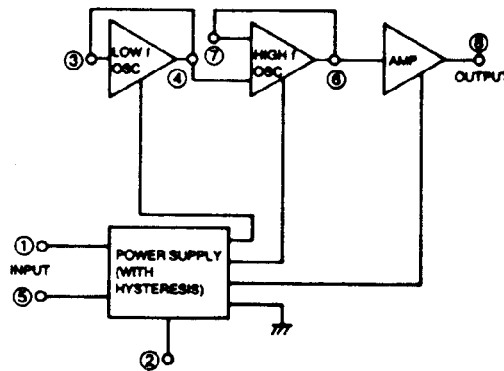


Fig. 12

IC6 AN6181K

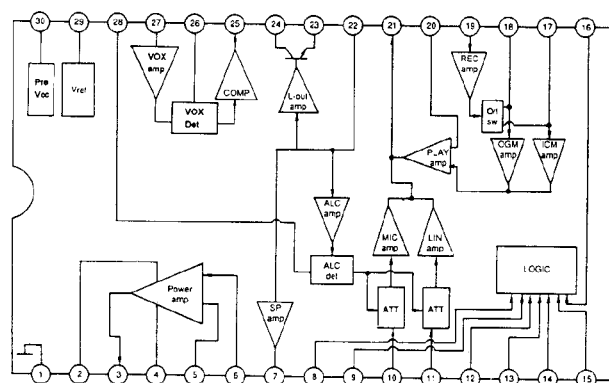


Fig. 13

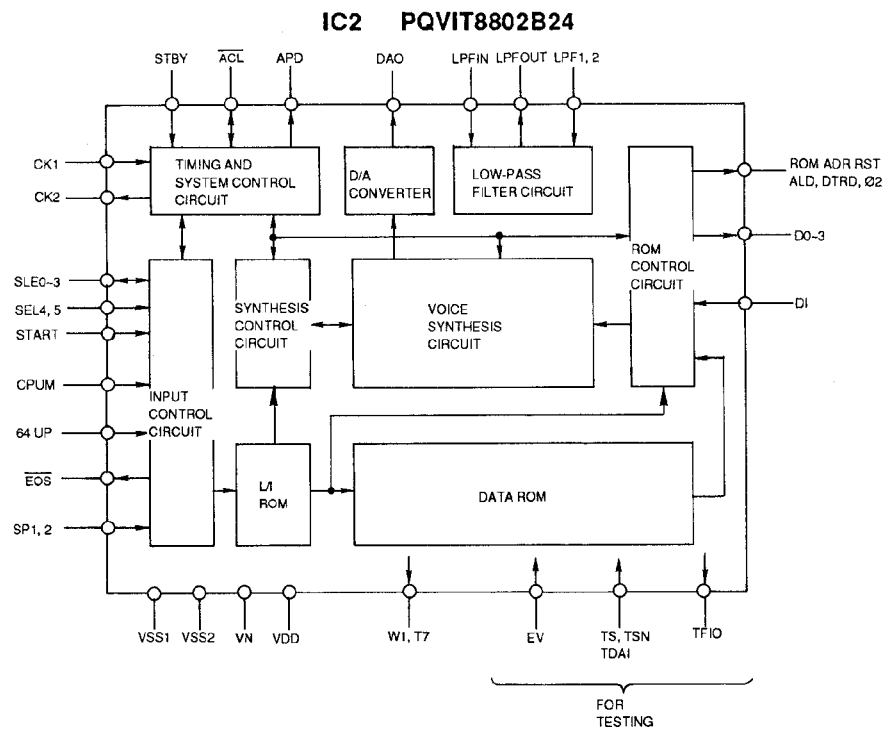


Fig. 14

1

2

3

4

5

6

7

A

B

C

D

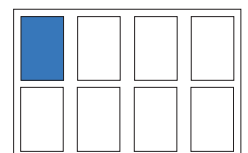
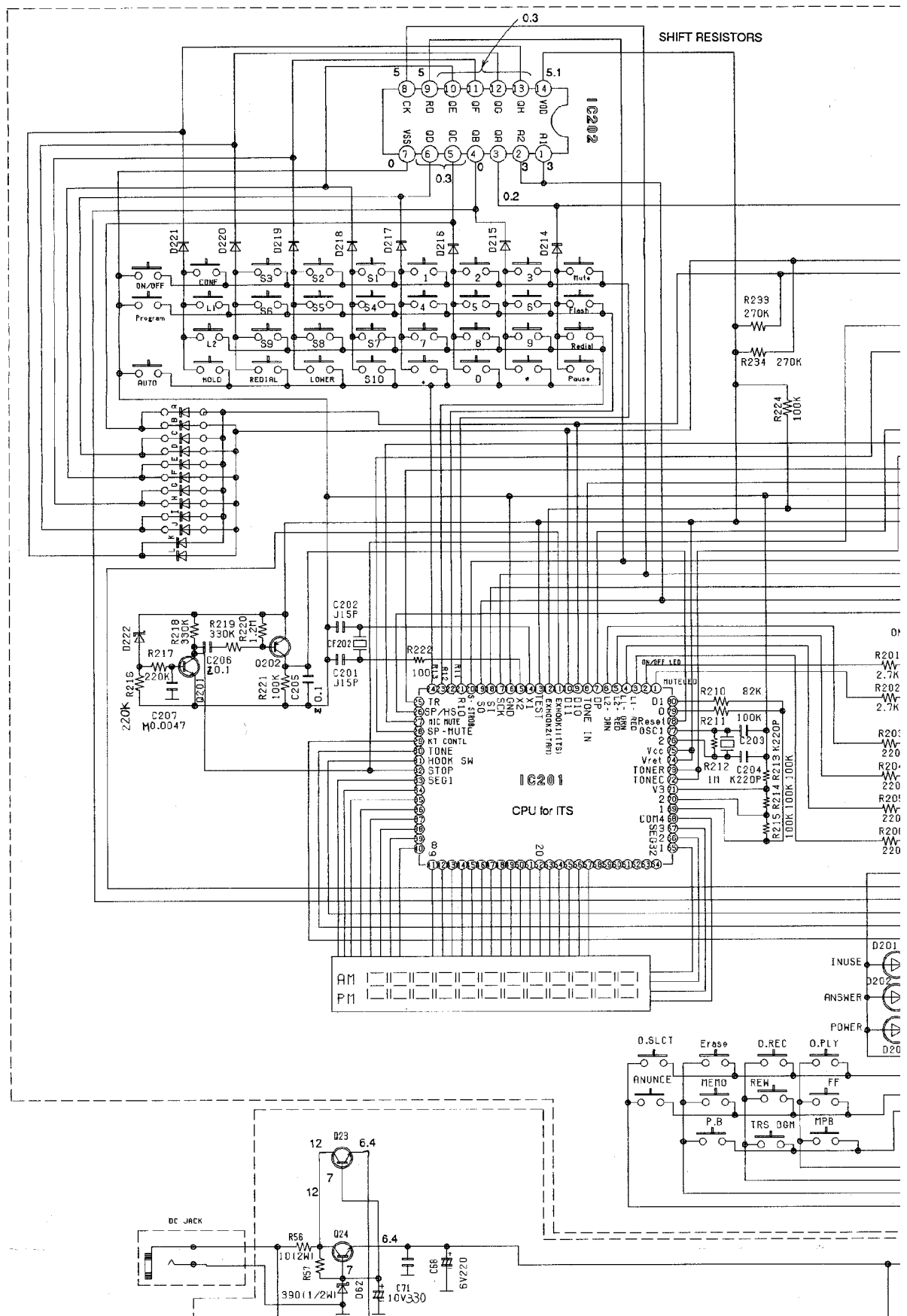
E

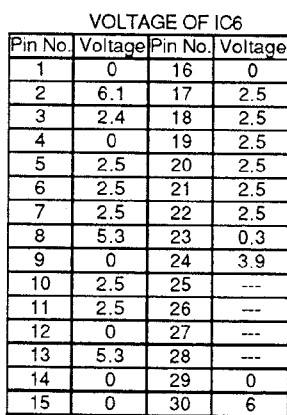
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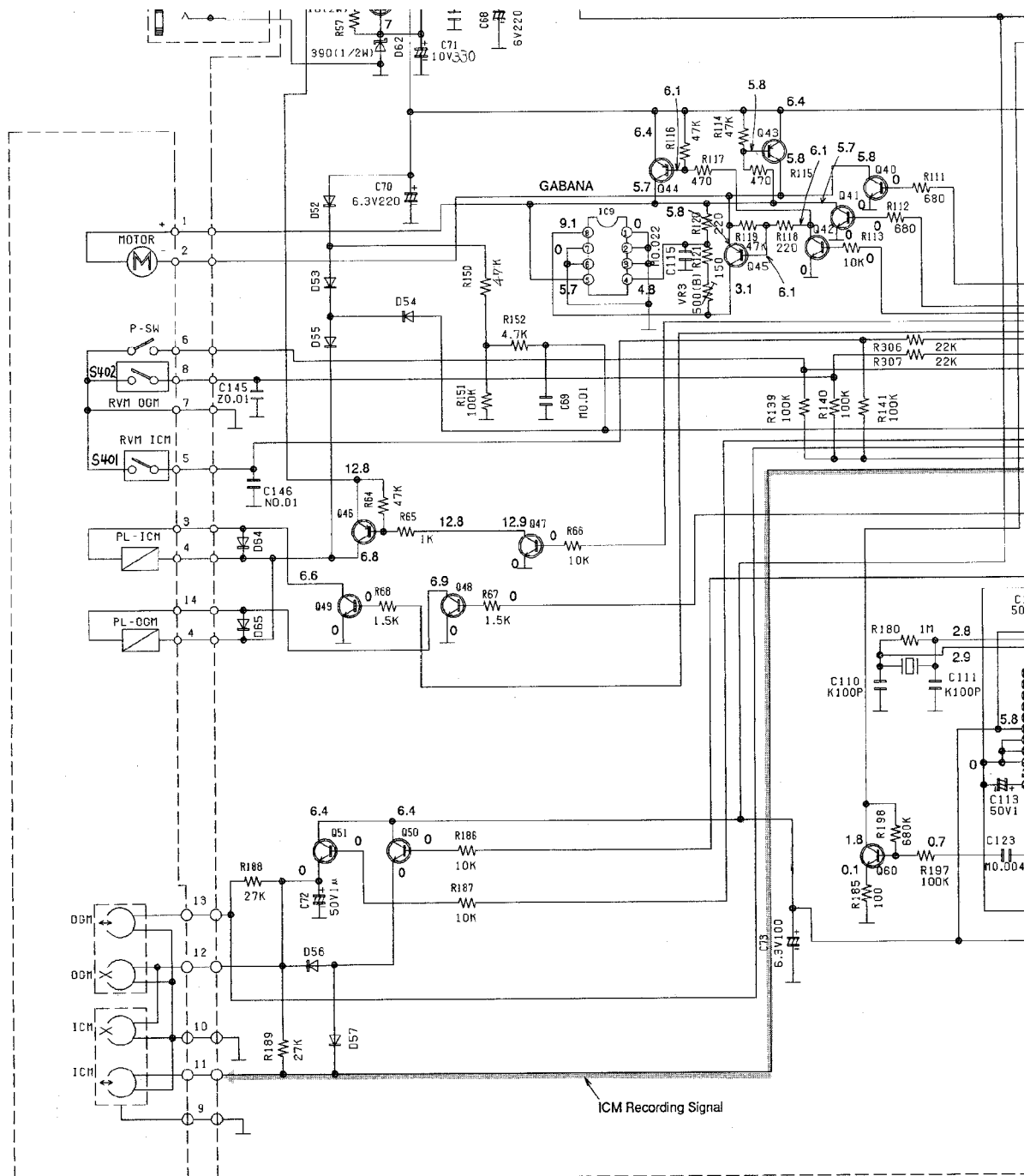
G

H

I



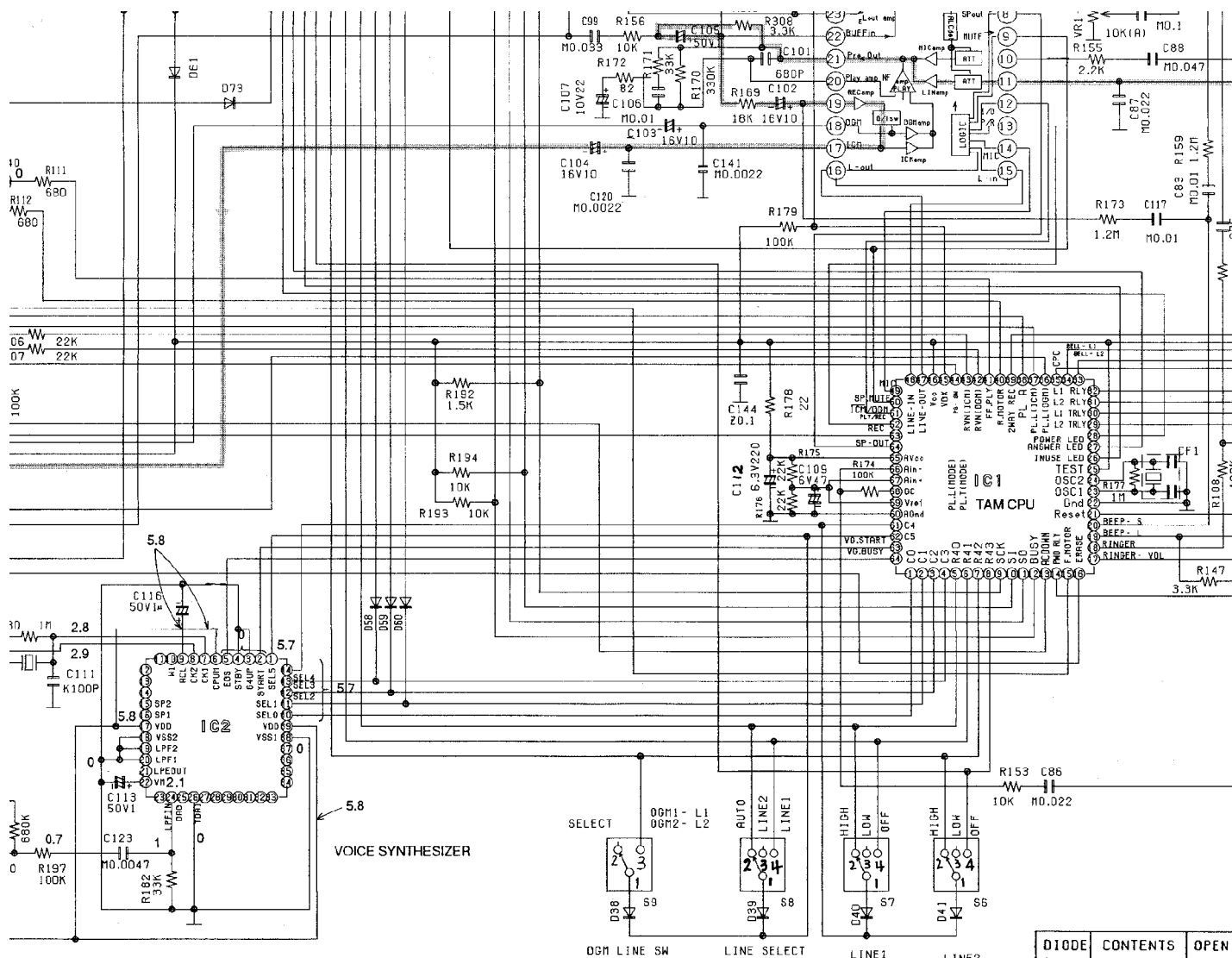




Notes:

1. S1: Hook switch in "OFF-HOOK" position.
2. S2: Power Failure selector.
3. S3: Line mode selector in "A" position.(Line 1)
4. S4: Line mode selector in "A" position.(Line 2)
5. S5: Dialing mode selector switch in "TONE" position.
6. S6: Ringer volume selector switch in "HIGH" position.(Line 2)
7. S7: Ringer volume selector switch in "HIGH" position.(Line 1)
8. S8: Answer Line selector.
9. S201~212: Dialing switch.
10. S213: OGM Recording switch.
11. S214: OGM Play switch.
12. S215: OGM Erase switch.
13. S216: OGM Transfer switch.
14. S217: Answer system ON/OFF switch.
15. S218: OGM select switch.
16. S219: Memo/2 way switch.
17. S220: Rewind switch.
18. S221: Fast forward.
19. S222: Conf. switch.
20. S223: Line switch.(Line 1)
21. S224: Line switch.(Line 2)
22. S225: Hold switch.
23. S226: Time/Day check switch.
24. S227: Predial switch.
25. S228: Auto/Store switch.
26. S229: Pause switch.
27. S230: Flash switch.
28. S231: Redial switch.
29. S232: Mute switch.
30. S233: SP-Phone switch.
31. S234:
32. S235:
33. S236:
34. S237:
35. S238:
36. S239:
37. S240~5
38. S246:
39. S247:
40. DC volt: electron





VOLTAGE OF IC5

Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage
1	2.4	8	0	15	2.4	22	8.5
2	2.3	9	2.4	16	1.5	23	0.7
3	2.4	10	5.6	17	3	24	0.6
4	2.4	11	2.3	18	0	25	0.7
5	2.4	12	2.4	19	8.5	26	0
6	2.4	13	2.4	20	8.5	27	2
7	2.7	14	2.4	21	8.5	28	0

DIODE	CONTENTS	OPEN
DA	%BREAK	61%
DB	PULSESPEED	10PP
DC	LCD TEST	NOrmi
DD	DTMFTEST	Pual
DI	TRANSFER	0
DJ		Meca

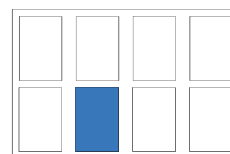
31. S234: Program switch.
32. S235: Lower switch.
33. S236: Secret switch.
34. S237: Hyphen switch
35. S238: Clear switch.
36. S239: Playback/Pause switch.
37. S240~5: Direct switch.
38. S246: Transfer switch.
39. S247: New message(PB) switch.
40. DC voltage measurement are taken with an electronic voltmeter from negative line.

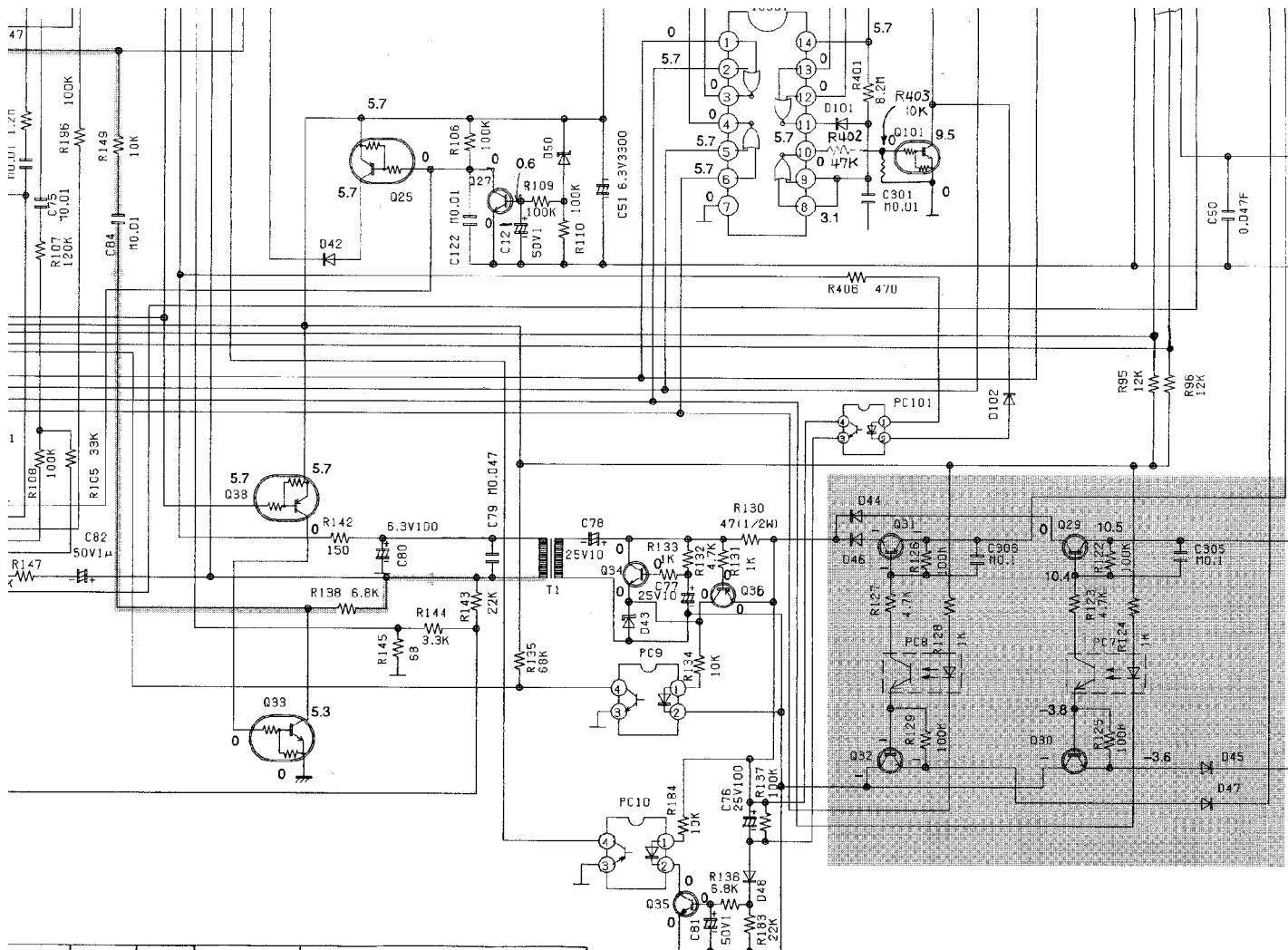
Important safety notice

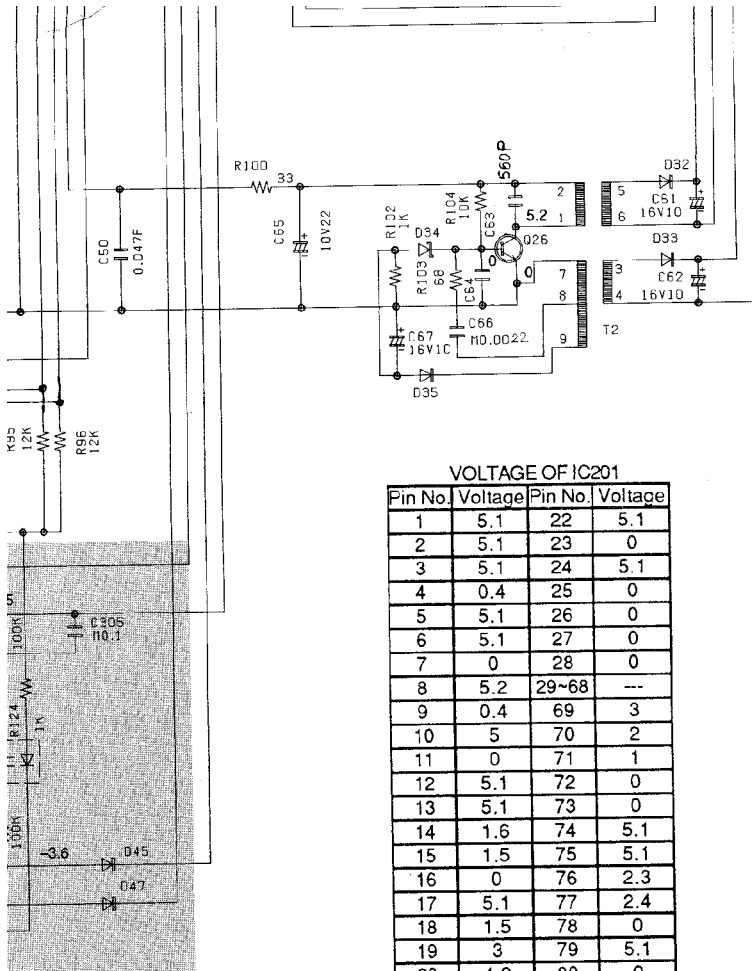
The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards. When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded area of the schematic.

(Add 40 mA to telephone line from the loop simulator.)

- Off-hook condition
- Answer Set condition
- Volume MAX.
- Select the Line 1.







VOLTAGE OF IC201

Pin No.	Voltage	Pin No.	Voltage
1	5.1	22	5.1
2	5.1	23	0
3	5.1	24	5.1
4	0.4	25	0
5	5.1	26	0
6	5.1	27	0
7	0	28	0
8	5.2	29~68	---
9	0.4	69	3
10	5	70	2
11	0	71	1
12	5.1	72	0
13	5.1	73	0
14	1.6	74	5.1
15	1.5	75	5.1
16	0	76	2.3
17	5.1	77	2.4
18	1.5	78	0
19	3	79	5.1
20	4.9	80	0
21	5.1		

o.		Ref No.		Ref No.	
	RECTIFIER	D43	REGULATOR	D72, 73	SWITCHING
	SWITCHING	D44~50	SWITCHING	D101, D102	SWITCHING
	PROTECTOR	D52~61	SWITCHING	D201~207	LED
	PROTECTOR	D62	REGULATOR	D214~222	SWITCHING
	REGULATOR	D63~70	SWITCHING		
3	SWITCHING	D71	REGULATOR		



CASSETTE DECK PARTS LOCATION

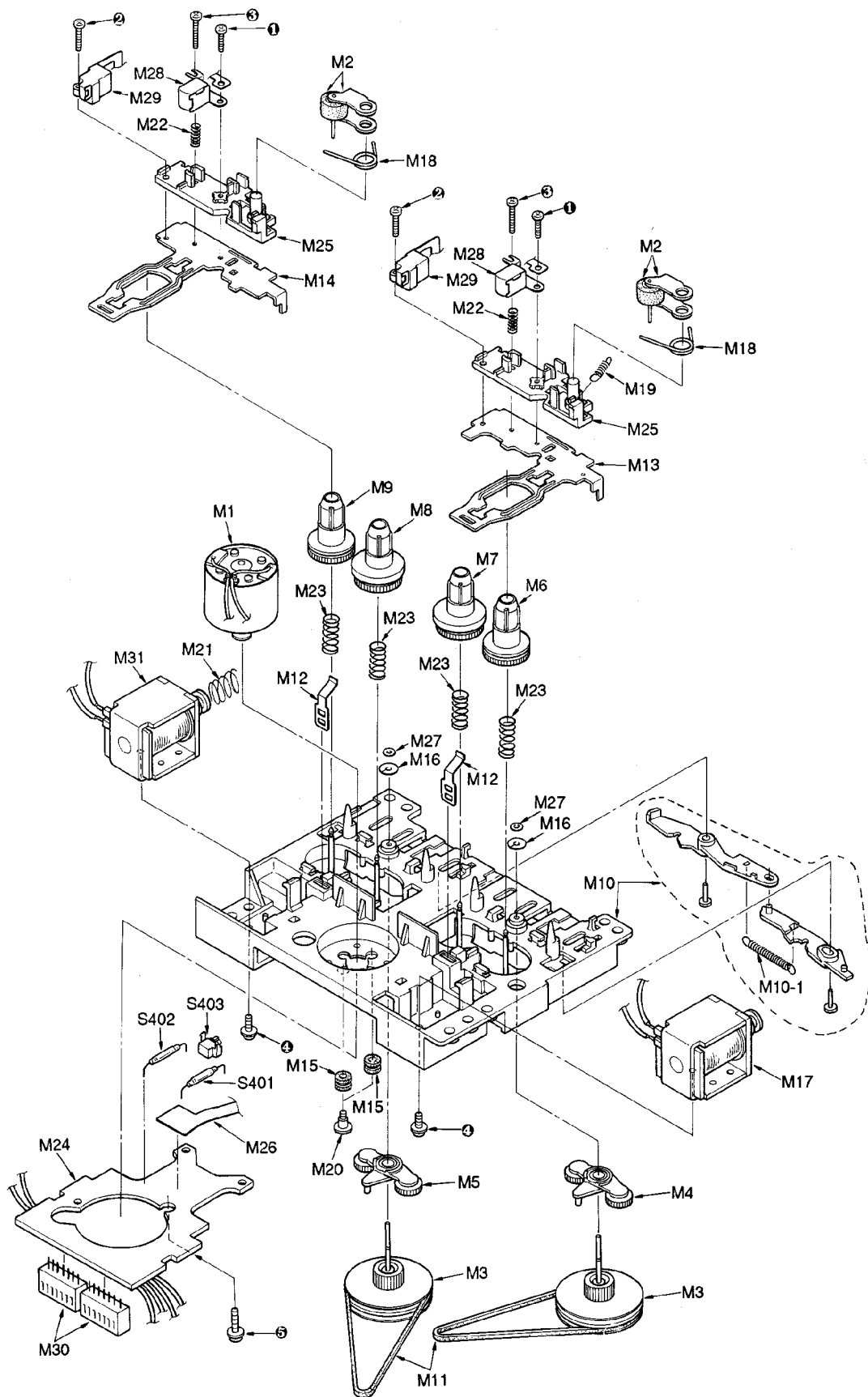


Fig. 17

CABINET AND ELECTRICAL PARTS LOCATION

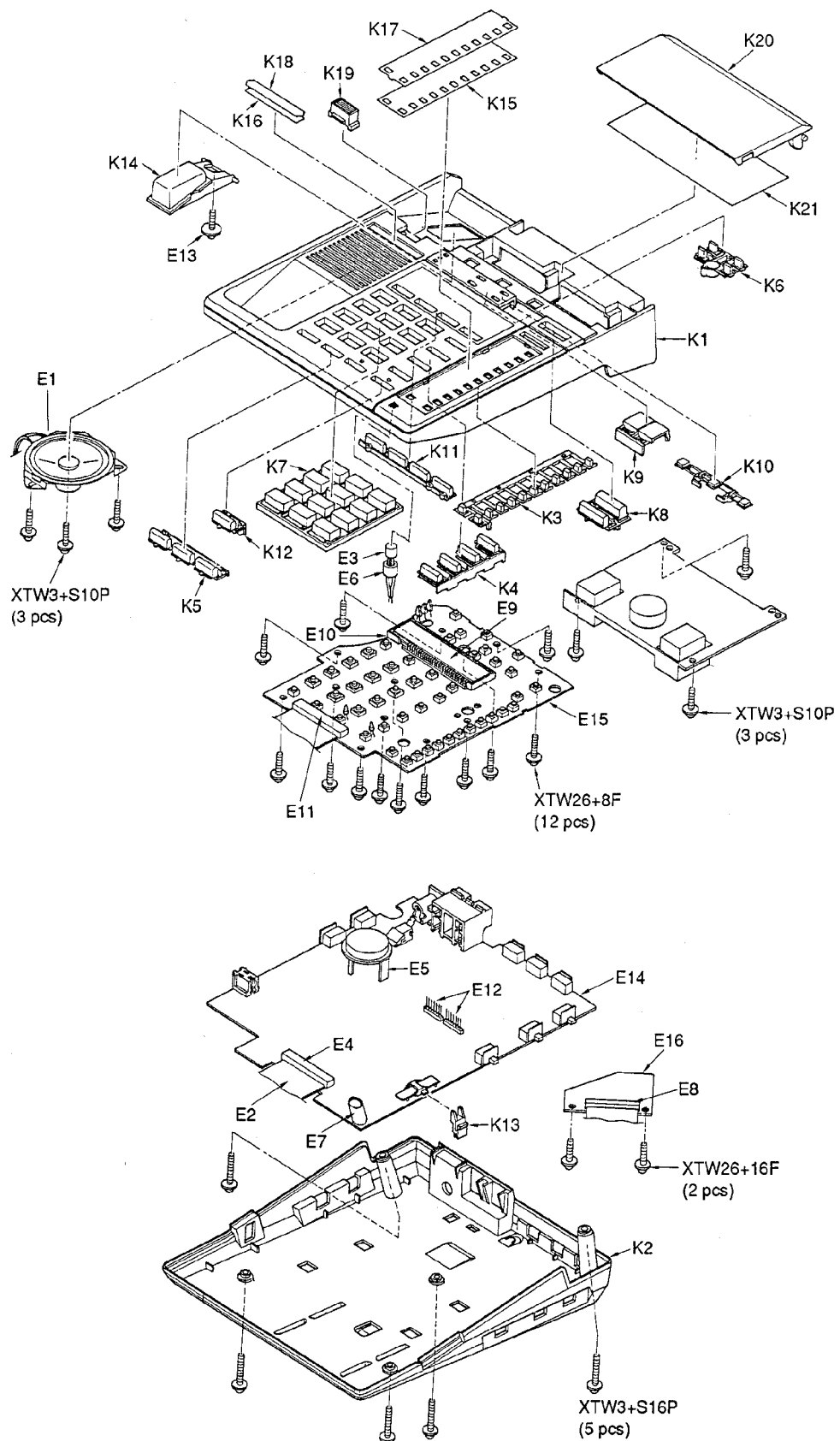



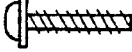









Fig. 18

Actual Size of Screws

●For Unit

Actual Size	Part No.
	E13
	XTW26+8F
	XTW3+S10P
	XTW3+S16P
	XTW26+16F

●For DECK

Ref No.	Actual Size	Part No.
①		XSN17+6FZ-3
②		XSN17+7FN-3
③		XSN17+10FN-3
M20		PQHD15Z
④		XTW26+5LF-A
⑤		XTW26+6F

REPLACEMENT PARTS LIST

Model KX-T2740

Notes:

1. Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set.
2. Important safety notice.
Components identified by the Δ mark special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.
3. The S mark indicates service standard parts and may differ from production parts.

4. RESISTORS & CAPACITORS

Unless otherwise specified.

All resistors are in ohms(Ω) k=1000 Ω , M=1000k Ω

All capacitors are in MICRO FARADS(μ F) P= μ F

*Type &Wattage of Resistor

Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ER0:Metal Film	ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12, 50, S1:1/2W	1:1W	2:2W	3:3W
------------	------------	-----------------	------	------	------

*Type & Voltage of Capacitor

Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,PQCB C : Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG : Polyester
PQCUV:Chip	ECEA,ECSZ : Electrolytic
ECQMS:Mica	ECQP : Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H:50V	05:50V	0F:3.15V	0J :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		0J:6.3V	1E,25:25V	2A :100V

Ref. No.	Part No.	Part Name & Description	Pcs
MECHANICAL PARTS			
M1	PQFM9916Z	MOTOR ASSEMBLY	1
M2	PQFD9917Z	PINCH ROLLER ASSEMBLY	2
M3	PQFF9913Z	FLYWHEEL ASSEMBLY	2
M4	PQFG9907Z	ICM GEAR ASSEMBLY	1
M5	PQFG9908Z	OGM GEAR ASSEMBLY	1
M6	PQFR9912Z	ICM TAKEUP REEL TABLE ASSEMBLY	1
M7	PQFR9913Z	ICM SUPPLY REEL TABLE ASSEMBLY	1
M8	PQFR9921Z	OGM TAKEUP REEL TABLE ASSEMBLY	1
M9	PQFR9922Z	OGM SUPPLY REEL TABLE ASSEMBLY	1
M10	PQFC9913Z	MECHANISM CHASSIS ASSEMBLY	1
M10-1	PQFS127Z	LEAF SPRING	1
M11	PQFB23Z	BELT	2
M12	PQFD64Z	SPRING	2
M13	PQFD88Z	HEAD BASE-A (ICM)	1
M14	PQFD89Z	HEAD BASE-A (OGM)	1
M15	PQFI14Z	RUBBER PARTS, MOTOR CUSHION	2
M16	PQFN49Z	WASHER	2
M17	PQFP128Z	PLUNGER-A	2
M18	PQFS109Z	SPRING	2
M19	PQFS110Z	SPRING	1
M20	PQHD15Z	SCREW	1
M21	PQFS132Y	SPRING	1
M22	PQFS73Z	SPRING	2
M23	PQFS82Z	SPRING	4
M24	PQUP885Z	PRINTED CIRCUIT BOARD	1
M25	PQFW42Z	HEAD BASE-B (ICM, OGM)	2
M26	PQUP886Z	PRINTED CIRCUIT BOARD	1
M27	PQFN33Z	WASHER	2
M28	PQJH1M2Z	R/P HEAD	2
M29	PQJH6M2Z	ERASE HEAD	2
M30	PQJS7B30Z	CONNECTOR, 7 PIN	2
M31	PQFP129Z	PLUNGER-B	1
INTEGRATED CIRCUITS, TRANSISTORS & DIODES			
IC1	PQVI4678A05H	IC	1
IC2	PQVIT8802B24	IC	1

Ref. No.	Part No.	Part Name & Description	Pcs
IC3	PQVITC4071BF	IC	1
IC5	PQVISC79054A	IC	1
IC6	AN5181K	IC	1
IC7	AN6562	IC	S 1
IC8	PQVIBA8205	IC	1
IC9	PQVIBA6220	IC	1
IC201	PQVI4608A58F	IC	1
IC202	PQVITC7H164P	IC	S 1
IC301	PQVITC4001BP	IC	1
Q1, 3, 14, 29, 31	2SA1626	TRANSISTOR(SI)	5 Δ
Q2, 4, 30, 32	2SC3631	TRANSISTOR(SI)	S 4 Δ
Q5, 6, 9~12, 18, 22, 27, 35, 39, 42, 47, 50, 51, 60	2SD1819A	TRANSISTOR(SI)	S 16
Q7, 20, 52	UN5213	TRANSISTOR(SI)	S 3
Q8	UN521	TRANSISTOR(SI)	S 1
Q13	2SD662B	TRANSISTOR(SI)	S 1 Δ
Q15, 19, 26, 101	2SC1740S	TRANSISTOR(SI)	S 4
Q16, 36	2SB1218A	TRANSISTOR(SI)	S 2
Q17, 34	PQVTKSD261CY	TRANSISTOR(SI)	2
Q21, 33	PQVTBB1A4M	TRANSISTOR(SI)	2
Q23	2SD1266	TRANSISTOR(SI)	1
Q24	2SD2136	TRANSISTOR(SI)	1
Q25, 37, 38	UN5113	TRANSISTOR(SI)	S 3
Q40, 41	2SC1652	TRANSISTOR(SI)	2
Q43~46	2SB1322	TRANSISTOR(SI)	4
Q48, 49	2SD1994A	TRANSISTOR(SI)	S 2
Q102, 202	2SA933	TRANSISTOR(SI)	2
Q201	2SC3330	TRANSISTOR(SI)	S 1
D1~3	PQVDS1ZB40F1	DIODE(SI)	3 Δ
D4, 12~18, 23~27, 32, 33, 35, 37~42, 48, 49, 54, 56~60, 63, 70, 72, 73, 214~220	MA165	DIODE(SI)	S 41
D5~8, 44~47	PQVDS5688G	DIODE(SI)	S 8 Δ
D9	MA4300	DIODE(SI)	1 Δ
D10	MA4180	DIODE(SI)	1 Δ
D11	PQVDMT25R6	DIODE(SI)	1
D19~22, 101, 102	1SS131	DIODE(SI)	6 Δ
D28, 30	PQVDMZJ24A	DIODE(SI)	2
D29, 31	PQVDMZJ12C	DIODE(SI)	2
D34, 50	MA4047	DIODE(SI)	2
D36, 65~69, 221	MA161	DIODE(SI)	S 7
D43	PQVD05AZ6R2	DIODE(SI)	1
D52, 53, 55, 61, 64	1SS119	DIODE(SI)	5
D62	MA4068	DIODE(SI)	1
D71	MA4062	DIODE(SI)	1
D201	PQVDSLZ275B2	LED	1
D202, 203	PQVDSLZ175B1	LED	2
D204, 205	LN02102C13LF	LED	2
D206, 207	PQVDSLZ135B2	LED	2
D222	PQVDHZ3ALL	DIODE(SI)	1
JACKS			
JJ1	PQJ1TB18Z	JACK, TELEPHONE	1
JJ2	PQJ3HAB1Z	JACK, DC-TEL-TEL	1
HANDSET PART			
H1	PQJX2PM409Z	HANDSET ASSEMBLY (CANT BE ASSEMBLED.)	1

Ref. No.	Part No.	Part Name & Description	Pcs
SWITCHES			
S1	ESE14A211	SWITCH, HOOK	1 ▲
S2	PQSS2B18Z	SWITCH, POWER FAILURE SELECTOR	1 ▲
S3	PQSS2A27Z	SWITCH, LINE MODE SELECTOR (L1)	1
S4	PQSS2A27Z	SWITCH, LINE MODE SELECTOR (L2)	1
S5	PQSS2A27Z	SWITCH, DIALING MODE SELECTOR	1
S6	PQSS3A17Z	SWITCH, RINGER VOLUME SELECTOR (L2)	1
S7	PQSS3A17Z	SWITCH, RINGER VOLUME SELECTOR (L1)	1
S8	PQSS3A17Z	SWITCH, ANS LINE SELECTOR	1
S9	PQSS2A27Z	SWITCH, LINE OGM SELECTOR	1
S201~212	PQSH1A33Z	SWITCH, DIALING	12
S213~247	EVQ12405K	SWITCH, OGM REC, OGM PLAY etc.	35
S401, 402	PQSE91Z	SWITCH, REED (FOR DECK)	2
S403	PQSH1A17Y	SWITCH, POSITION (FOR DECK)	1
RLY1	PQSL58Z	RELAY	1 ▲
CABINET PARTS			
K1	PQYMT2740M	UPPER CABINET ASSEMBLY	1
K2	PQYF1045Z0	LOWER CABINET ASSEMBLY	1
K3	PQBCX146Z	BUTTON, DIRECT CALL etc.	1
K4	PQBCX147Z	BUTTON, PREDIAL, PAUSE etc.	1
K5	PQBCX148Z	BUTTON, FLASH, REDIAL, MUTE	1
K6	PQBCX149Z	BUTTON, OGM SELECT etc.	1
K7	PQBCX150Z	BUTTON, 12 KEY	1
K8	PQBCX151Z	BUTTON, PLAYBACK/PAUSE	1
K9	PQBCX152Z	BUTTON, REW, FF	1
K10	PQBCX153Z	BUTTON, OGM, REC, OGM PLAY etc.	1
K11	PQBCX154Z	BUTTON, CONF., LINE 1, 2, HOLD	1
K12	PQBC248Z	BUTTON, SPEAKERPHONE	1
K13	PQBD142Z	KNOB, VOLUME	1
K14	PQBE28Z	BUTTON, HOOK	1
K15	PQHP5048Z	TELEPHONE CARD (LARGE)	1
K16	PQHP532T	TELEPHONE CARD (SMALL)	1
K17	PQHR5264Z	TRANSPARENT PLATE (LARGE)	1
K18	PQHR576Z	TRANSPARENT PLATE (SMALL)	1
K19	PQKE46Y3	HANDSET HOLDER	1
K20	PQKG9Z	CASSETTE LID	1
K21	PQQT5129Z	INDICATION PLATE-LABEL	1
ELECTRICAL PARTS			
E1	PQAS65P19Z	SPEAKER	1
E2	PQJE92Z	LEAD WIRE	1
E3	PQJM120Z	MICROPHONE	1
E4	PQJS34X53Z	CONNECTOR, 34 PIN (CN3)	1
E5	PQWHT2390M	BUZZER ASSEMBLY (CF3)	1
E6	PQHG503Z	RUBBER PARTS, MICROPHONE	1
E7	PQHR9384Z	PLASTIC PARTS, MICROPHONE	1
E8	PQJP10G43Z	CONNECTOR, 10 PIN (CN4-1)	1
E9	PQADHLC9826	LIQUID CRYSTAL DISPLAY	1
E10	PQHR9383Z	LCD SPACER	1
E11	PQJS34X53Z	CONNECTOR, 34 PIN (CN201)	1
E12	PQJP7D92Z	CONNECTOR, 7 PIN (CN1, 2)	2
E13	PJHE5065Z	SCREW	1
E14	PQWP1T2740M	MAIN, PRINTED CIRCUIT BOARD(NLA)	1
E15	PQWP2T2740M	SUB, PRINTED CIRCUIT BOARD(NLA)	1
E16	PQWP3T2740M	SUB, PRINTED CIRCUIT BOARD (NLA)	1
OTHERS			
SA1, 2	PQVDSAE310F1	VARIATOR	2 ▲
VR1	PQVAM3A14B24	VARIABLE RESISTOR, 20KΩ	1
VR2	EVNDXAA03B35	VARIABLE RESISTOR, 300KΩ	1
VR3	EVNDXAA03B52	VARIABLE RESISTOR, 500Ω	1
CF1	PQVBT4.0G2	CERAMIC FILTER	1
CF2, 201	PQVBB800J1	CERAMIC FILTER	2
CF202	PQVCL3276N6Z	CRYSTAL OSCILLATOR	1
PC1, 2	PQVIPC814Y	PHOTO ELECTRIC TRANSDUCER	2 ▲
PC3, 4, 9, 10, 101	PQVIPC817CD	PHOTO ELECTRIC TRANSDUCER	5
PC5~8	PQVIPC851K	PHOTO ELECTRIC TRANSDUCER	4 ▲
T1	PQLT8F3A	TRANSFORMER	1
T2	PQLT9Z2A	TRANSFORMER	1

Ref No.	Part No.	Value	Ref No.	Part No.	Value
ACCESSORIES					
A1	KX-A11	AC ADAPTOR			1
A2	PQJA30V	HANDSET CORD			1
A3	PQJA48Y	TELEPHONE CORD (4 WIRES)			1
A4	PQJA59Y	TELEPHONE CORD (2 WIRES)	S		1
A5	RT-N30-JT1P	MAGNETIC RECORDING TAPE			2
A6	PQOX9572Z	DIAL CARD			1
A7	PQOX6120Z	INSTRUCTION BOOK			1
A8	PQKL13Z0	STAND			1
A9	PQHP5020U	STATION CARD			1
PACKING MATERIALS					
P1	PQPK991Z	GIFT BOX			1
P2	PQPN1077Z	CUSHION			1
P3	PQPN1078Z	ACCESSORY BOX			1
P4	XZB34X40A01	PROTECTION COVER (for SET)			1
P5	PQPH75Z	PROTECTION COVER (for HANDSET)			1
Ref No.	Part No.	Value	Ref No.	Part No.	Value
RESISTORS					
R1	ERDS2TJ473	47K ▲	R53	ERDS2TJ473	47K
R2	ERDS2TJ473	47K ▲	R54	PQ4R10XJ473	47K
R3	ERDS1TJ682	6.8K ▲	R55	PQ4R10XJ473	47K
R4	ERDS2TJ153	15K	R56	PQ4R10XJ100	10
R5	ERDS2TJ334	330K	R57	ERDS1TJ391	390
R6	PQ4R10XJ124	120K	R58	PQ4R10XJ334	330K
R7	ERDS2TJ821	820	R59	PQ4R10XJ103	10K
R8	ERC14GM226	22M	R60	PQ4R10XJ155	1.5M
R9	PQ4R10XJ104	100K ▲	R61	PQ4R10XJ154	150K
R10	ERDS2TJ472	4.7K ▲	R62	ERDS2TJ472	4.7K
R11	PQ4R10XJ102	1K ▲	R63	PQ4R10XJ103	10K
R12	PQ4R10XJ104	100K ▲	R64	PQ4R10XJ473	47K
R13	PQ4R10XJ104	100K ▲	R65	PQ4R10XJ102	1K
R14	ERDS2TJ472	4.7K ▲	R66	PQ4R10XJ103	10K
R15	PQ4R10XJ102	1K ▲	R67	ERD25TJ152	1.5K
R16	PQ4R10XJ104	100K ▲	R68	PQ4R10XJ152	1.5K
R17	PQ4R10XJ683	68K ▲	R69	PQ4R10XJ103	10K
R18	PQ4R10XJ104	100K ▲	R70	ERDS2TJ473	47K
R19	ERDS2TJ472	4.7K ▲	R71	Not Used	
R20	PQ4R10XJ104	100K ▲	R72	PQ4R10XJ103	10K
R21	ERDS1TJ220	22 ▲	R73	PQ4R10XJ183	18K
R22	ERDS1TJ101	100	R74	PQ4R10XJ562	5.6K
R23	PQ4R18XJ100	10	R75	PQ4R10XJ103	10K
R24	PQ4R10XJ101	100	R76	PQ4R10XJ394	390K
R25	PQ4R10XJ472	4.7K	R77	PQ4R10XJ103	10K
R26	PQ4R10XJ472	4.7K	R78	PQ4R10XJ103	10K
R27	PQ4R10XJ103	10K	R79	PQ4R10XJ104	100K
R28	PQ4R10XJ102	1K	R80	PQ4R10XJ473	47K
R29	PQ4R10XJ562	5.6K	R81	Not Used	
R30	PQ4R10XJ562	5.6K	R82	PQ4R10XJ103	10K
R31	ERDS2TJ150	15	R83	PQ4R10XJ682	6.8K
R32	PQ4R10XJ393	39K	R84	PQ4R10XJ124	120K
R33	PQ4R10XJ153	15K	R85	PQ4R10XJ473	47K
R34	PQ4R10XJ333	33K	R86	PQ4R10XJ124	120K
R35	PQ4R10XJ477	4.7	R87	PQ4R10XJ473	47K
R36	ERDS2TJ103	10K	R88	ERC14GM226	22M ▲
R37	PQ4R10XJ103	10K	R89	Not Used	
R38	PQ4R10XJ392	3.9K	R90	Not Used	
R39	PQ4R10XJ104	100K	R91	PQ4R10XJ335	3.3M
R40	PQ4R10XJ682	6.8K	R92	PQ4R10XJ224	220K
R41	PQ4R10XJ183	1.8K	R93	PQ4R10XJ102	1K
R42	PQ4R10XJ153	15K	R94	ERC14GM226	22M ▲
R43	PQ4R10XJ102	1K	R95	PQ4R10XJ123	12K
R44	PQ4R10XJ124	120K	R96	PQ4R10XJ123	12K
R45	PQ4R10XJ563	56K	R97	PQ4R10XJ335	3.3M
R46	ERDS2TJ472	4.7K	R98	PQ4R10XJ224	220K
R47	PQ4R10XJ183	18K	R99	PQ4R10XJ102	1K
R48	PQ4R10XJ333	33K	R100	PQ4R10XJ330	33
R49	PQ4R10XJ123	12K	R101	Not Used	
R50	PQ4R10XJ393	39K	R102	PQ4R10XJ102	1K
R51	Not Used		R103	PQ4R10XJ680	68
R52	Not Used		R104	PQ4R10XJ103	10K

Ref No.	Part No.	Value	Ref No.	Part No.	Value
R105	PQ4R10XJ133	13K	R172	PQ4R10XJ820	82
R106	PQ4R10XJ104	100K	R173	ERDS2TJ125	1.2M
R107	ERDS2TJ124	120K	R174	PQ4R10XJ104	100K
R108	PQ4R10XJ104	100K	R175	PQ4R10XJ223	22K
R109	PQ4R10XJ104	100K	R176	PQ4R10XJ223	22K
R110	PQ4R10XJ104	100K	R177	PQ4R10XJ105	1M
R111	ERD25TJ681	680	R178	PQ4R10XJ220	22
R112	PQ4R10XJ681	680	R179	PQ4R10XJ104	100K
R113	ERD25TJ103	10K	R180	PQ4R10XJ105	1M
R114	PQ4R10XJ473	47K	R181	PQ4R10XJ333	33K
R115	PQ4R10XJ471	470	R182	PQ4R10XJ333	33K
R116	PQ4R10XJ473	47K	R183	PQ4R10XJ223	22K
R117	PQ4R10XJ471	470	R184	PQ4R10XJ103	10K
R118	PQ4R10XJ221	220	R185	PQ4R10XJ101	100
R119	PQ4R10XJ473	47K	R186	PQ4R10XJ103	10K
R120	PQ4R10XJ221	220	R187	PQ4R10XJ103	10K
R121	PQ4R10XJ151	150	R188	PQ4R10XJ273	27K
R122	PQ4R10XJ104	100K Δ	R189	PQ4R10XJ273	27K
R123	ERDS2TJ472	4.7K Δ	R190	Not Used	
R124	PQ4R10XJ102	1K Δ	R191	ERDS2TJ103	10K
R125	PQ4R10XJ104	100K Δ	R192	ERDS2TJ152	1.5K
R126	PQ4R10XJ104	100K Δ	R193	PQ4R10XJ103	10K
R127	ERDS2TJ472	4.7K Δ	R194	PQ4R10XJ103	10K
R128	PQ4R10XJ102	1K Δ	R195	ERDS2TJ224	220K
R129	PQ4R10XJ104	100K Δ	R196	ERDS2TJ104	100K
R130	ERDS1TJ470	47	R197	PQ4R10XJ104	100K
R131	ERDS2TJ102	1K	R198	PQ4R10XJ684	680K
R132	PQ4R10XJ472	4.7K	R199	Not Used	
R133	PQ4R10XJ102	1K	R200	Not Used	
R134	PQ4R10XJ103	10K	R201	ERDS2TJ272	2.7K
R135	PQ4R10XJ683	68K	R202	ERDS2TJ272	2.7K
R136	PQ4R10XJ682	6.8K	R203	ERDS2TJ221	220
R137	PQ4R10XJ104	100K	R204	ERDS2TJ221	220
R138	ERDS2TJ682	6.8K	R205	ERDS2TJ221	220
R139	PQ4R10XJ104	100K	R206	ERDS2TJ221	220
R140	PQ4R10XJ104	100K	R207	ERDS2TJ221	220
R141	PQ4R10XJ104	100K	R208	ERDS2TJ102	1K
R142	PQ4R10XJ151	150	R209	ERDS2TJ102	1K
R143	PQ4R10XJ223	22K	R210	ERDS2TJ823	82K
R144	PQ4R10XJ332	3.3K	R211	ERDS2TJ104	100K
R145	PQ4R10XJ680	68	R212	ERDS2TJ105	1M
R146	Not Used		R213	ERDS2TJ104	100K
R147	ERDS2TJ332	3.3K	R214	ERDS2TJ104	100K
R148	PQ4R10XJ104	100K	R215	ERDS2TJ104	100K
R149	PQ4R10XJ103	10K	R216	ERDS2TJ224	220K
R150	ERDS2TJ473	47K	R217	ERDS2TJ224	220K
R151	PQ4R10XJ104	100K	R218	ERDS2TJ334	330K
R152	PQ4R10XJ472	4.7K	R219	ERDS2TJ334	330K
R153	PQ4R10XJ103	10K	R220	ERDS2TJ125	1.2M
R154	Not Used		R221	ERDS2TJ104	100K
R155	ERDS2TJ222	2.2K	R222	ERDS2TJ101	100
R156	PQ4R10XJ103	10K	R223	Not Used	
R157	PQ4R10XJ222	2.2K	R224	ERDS2TJ104	100K
R158	PQ4R18XJ154	150K			
R159	ERDS2TJ125	1.2M	R233	ERDS2TJ274	270K
R160	PQ4R10XJ472	4.7K	R234	ERDS2TJ274	270K
R161	PQ4R10XJ103	10K			
R162	PQ4R10XJ2R2	2.2	R302	Not Used	
R163	PQ4R10XJ104	100K	R303	ERDS2TJ473	47K
R164	ERDS2TJ222	2.2K	R304	PQ4R18XJ222	2.2K
R165	PQ4R10XJ334	330K	R305	PQ4R10XJ104	100K
R166	PQ4R10XJ333	33K	R306	PQ4R10XJ223	22K
R167	ERDS2TJ224	220K	R307	PQ4R10XJ223	22K
R168	PQ4R10XJ222	2.2K	R308	PQ4R10XJ332	3.3K
R169	PQ4R10XJ183	18K			
R170	PQ4R10XJ334	330K	R401	ERDS2TJ825	8.2M
R171	PQ4R10XJ333	33K	R402	ERDS2TJ473	47K
			R403	ERDS2TJ473	47K
			R404	ERDS2TJ473	47K
			R405	ERDS2TJ473	47K
			R406	ERDS2TJ471	470
			R407	PQ4R10XJ103	10K

Ref No.	Part No.	Value	Ref No.	Part No.	Value
CAPACITORS					
C1	ECQE2224KF	0.22 Δ	C76	ECEA1EU101	100
C2	ECQE2224KF	0.22 Δ	C77	ECEA1VKS100	10
C3	ECQE2105KF	1 Δ	C78	ECEA1VKS100	10
C4	ECEA1HKS100	10 Δ	C79	PQCUV1E473MD	0.047
C5	ECEA1HKS22	0.22	C80	ECEA1CK101	100
C6	ECQG1H822JZ	0.0082	C81	ECEA1HKS010	1
C7	ECKD2H681KB	680P Δ	C82	ECEA1HKS010	1
C8	ECKD2H681KB	680P Δ	C83	PQCUV1H103KB	0.01
C9	ECKD2H152JC	0.0015 Δ	C84	PQCUV1H103KB	0.01
C10	ECKD2H152JC	0.0015 Δ	C85	ECEA1HKS4R7	4.7
C11	ECKD2H152JC	0.0015 Δ	C86	PQCUV1H223KB	0.022
C12	ECKD2H152JC	0.0015 Δ	C87	ECFD1E223KD	0.022
C13	PQCUV1H103KB	0.01 Δ	C88	ECFD1E473KD	0.047
C14	ECEA1CKS100	10	C89	PQCUV1E104ZF	0.1
C15	PQCUV1H103KB	0.01	C90	PQCUV1H103KB	0.01
C16	ECEA1CKS100	10	C91	PQCUV1E333MD	0.033
C17	ECEA1CK101	100	C92	ECEA1HKS010	1
C18	ECFD1C104KD	0.1	C93	ECEA0JK221	220
C19	PQCUV1H471JC	470P	C94	PQCUV1H103KB	0.01
C20	PQCUV1H103KB	0.01	C95	PQCUV1H331JC	330P
C21	PQCUV1E473MD	0.047	C96	ECEA0JU102	1000
C22	PQCUV1H223KB	0.022	C97	ECEA1CK101	100
C23	PQCBC1C103MY	0.01	C98	PQCUV1H223KB	0.022
C24	PQCUV1H103KB	0.01	C99	PQCUV1E333MD	0.033
C25	PQCUV1H223KB	0.022	C100	ECEA1HKS4R7	4.7
C26	ECEA1CKS470	47	C101	PQCUV1H681JC	680P
C27	ECEA0JU102	1000	C102	ECEA1CKS100	10
C28	ECEA1CK101	100	C103	ECEA1CKS100	10
C29	PQCUV1H561JC	560P	C104	ECEA1CKS100	10
C30	PQCUV1E104ZF	0.1	C105	ECEA1HKS010	1
C31	ECEA1HKS010	1	C106	PQCUV1H103KB	0.01
C32	ECEA1HKS010	1	C107	ECEA1CKS220	22
C33	PQCUV1E224ZF	0.22	C108	PQCUV1E473MD	0.047
C34	ECEA1CKS100	10	C109	ECEA1CKS470	47
C35	PQCUV1H682KB	0.0068	C110	PQCUV1H101JC	100P
C36	PQCUV1H472KB	0.0047	C111	PQCUV1H101JC	100P
C37	ECEA1CKS100	10	C112	ECEA0JK221	220
C38	PQCUV1E104ZF	0.1	C113	ECEA1HKS010	1
C39	PQCUV1H103KB	0.01	C114	PQCUV1E104ZF	0.1
C40	PQCUV1E104ZF	0.1	C115	PQCUV1H223KB	0.022
C41	ECFD1C104KD	0.1	C116	ECEA1HKS010	1
C42	PQCUV1H472KB	0.0047	C117	PQCUV1H103KB	0.01
C43	PQCBC1C472MX	0.0047	C118	Not Used	
C44	PQCUV1H331JC	330P	C119	Not Used	
C45	PQCUV1H561JC	560P	C120	PQCUV1H222KB	0.0022
C46	Not Used		C121	ECEA1HKS010	1
C47	PQCUV1E104ZF	0.1	C122	PQCUV1H103KB	0.01
C48	EECF5R5H224	0.22	C123	ECFD1E472KD	0.0047
C49	ECEA0JK221	220	C124-9	Not Used	
C50	EECW0HS473Z	0.047	C130	ECEA0JK221	220
C51	ECEA0JU332	3300	C131	PQCBC1C103MY	0.01
C52	ECEA1HKS0R1	0.1	C141	PQCUV1H222KB	0.0022
C53	ECQM1H473JV	0.047	C142	Not Used	
C54	PQCUV1H222KB	0.0022	C143	ECUV1H472KB	0.0047
C55	Not Used		C144	ECUV1H104MD	0.1
C56	ECQM1H473JV	0.047	C145	PQCUV1H103KB	0.01
C57	ECEA1CU221	220	C146	PQCUV1H103KB	0.01
C58	ECEA1HKS010	1	C147	PQCUV1H472KB	0.0047
C59	PQCUV1C334ZF	0.33	C148	PQCUV1C683MD	0.068
C60	PQCUV1C334ZF	0.33	C149	PQCUV1H103KB	0.01
C61	ECEA1CKS100	10	C201	PQCBC1H150JC	15P
C62	ECEA1CKS100	10	C202	PQCBC1H150JC	15P
C63	PQCUV1H561JC	560P	C203	PQCBC1H221KB	220P
C64	PQCUV1H471JC	470P	C204	PQCBC1H221KB	220P
C65	ECEA1CKS220	22	C205	PQCBC1H104ZF	0.1
C66	PQCUV1H222KB	0.0022	C206	PQCBC1H104ZF	0.1
C67	ECEA1CKS100	10	C207	PQCBC1C472MX	0.0047
C68	ECEA0JK221	220	C301	PQCBC1C103MY	0.01
C69	PQCUV1H103KB	0.01	C302	Not Used	
C70	ECEA0JK221	220	C303	PQCUV1E104ZF	0.1
C71	ECEA1AU331	330	C304	PQCUV1E104ZF	0.1
C72	ECEA1HKS010	1	C305	PQCUV1E104ZF	0.1
C73	ECEA1CK101	100	C306	PQCUV1E104ZF	0.1
C74	Not Used		C307	PQCBC1C103MY	0.01
C75	PQCUV1H103KB	0.01	C308	PQCBC1C682KX	0.0068